

CLAIMS

1. Apparatus for laying elongate articles from a vessel at sea, the apparatus comprising tensioning means for controlling paying out of said articles along an axis of
5 said tensioning means, a structure tiltable between upright and horizontal states, wherein the apparatus is operable in a first mode wherein the tensioning means is carried by said structure with its axis at an elevated angle, and in a second mode wherein the tensioning means is arranged with its axis substantially horizontal.
- 10 2. Apparatus for laying elongate articles from a vessel at sea as claimed in claim 1 wherein the tiltable structure in the first mode carries a radius controller and a straightener for conditioning rigid pipe at a position upstream of the tensioning means.
3. Apparatus for laying elongate articles from a vessel at sea as claimed in claim 2
15 wherein the radius controller and/or the straightener are provided at least partially in the form of modules which can be removed when the structure is in the horizontal state.
4. Apparatus for laying elongate articles from a vessel at sea as claimed in any preceding claim which further comprises overboarding means for receiving flexible
20 elongate product from the tensioning means in the second mode.
5. Apparatus for laying elongate articles from a vessel at sea as claimed in claim 4 wherein the overboarding means comprises a sheave.
- 25 6. Apparatus for laying elongate articles from a vessel at sea as claimed in claim 4 or claim 5 wherein the overboarding means is provided at least partially in the form of a module which can be removed when the apparatus is in the first mode.
7. Apparatus for laying elongate articles from a vessel at sea as claimed in any of
30 the preceding claims wherein the tiltable structure is operable in the first mode to orient the tensioning means vertically and at a range of angles below vertical.

8. Apparatus for laying elongate articles from a vessel at sea as claimed in any preceding claim wherein the tensioning means is detached from the tiltable structure in the second mode, and the tiltable structure can be returned to an upright orientation for supporting loads independently of the tensioning means.

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9. Apparatus for laying elongate articles from a vessel at sea as claimed in claim 8 wherein the tiltable structure can be operated in the second mode at a range of angles either side of vertical, to support in-line accessories as the product travels over said overboarding means.

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10. Apparatus for laying elongate articles from a vessel at sea as claimed in any preceding claim wherein the tensioning means in the second mode is located at a position displaced horizontally from a location from which it will be elevated by said tiltable structure in the first mode.

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11. Apparatus for laying elongate articles from a vessel at sea as claimed in any preceding claim wherein the tiltable structure comprises a pair of legs pivoted to the deck of the vessel at their lower ends and joined by a crossbeam at their upper ends, the tensioning means in the first mode being carried between the legs below the crossbeam, with a straightener and radius controller mounted above the crossbeam and being detachable when adapting the apparatus into the second mode.

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12. Apparatus for laying elongate articles from a vessel at sea as claimed in claim 10 wherein the tiltable structure is movable to provide said horizontal displacement of the tensioning means.

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13. Apparatus for laying elongate articles from a vessel at sea as claimed in claim 12 wherein the tiltable structure is connected to the vessel by one or more arms pivotally connected at one end to the tiltable structure and at another end to the vessel.

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14. Apparatus for laying elongate articles from a vessel at sea as claimed in any preceding claim wherein the hydraulic control system of the tensioning means is a dual hydraulic system.
- 5 15. Apparatus for laying elongate articles from a vessel at sea as claimed in any preceding claim wherein the tensioning means include pads for gripping the elongate article, each pad comprising a base piece bolted to the tensioning means and an insert fitted with a quick release mechanism so that it can be changed for a different insert.
- 10 16. A method of configuring apparatus for laying elongate articles from a vessel at sea, the apparatus comprising tensioning means for controlling paying out of said articles along an axis of said tensioning means, a structure tiltable between upright and horizontal states, wherein the apparatus is configurable in a first mode wherein the tensioning means is carried by said structure with its axis at an elevated angle, and in a
15 second mode wherein the tensioning means is arranged with its axis substantially horizontal which method includes detaching certain operating equipment from the structure, moving the structure between the upright position and the horizontal position and locating certain operating equipment for operation with the structure in the particular mode of operation.
- 20 17. A method as claimed in claim 16 wherein the operating equipment is provided as modules which can be removed and relocated with respect to the structure.
18. A method as claimed in claim 16 or claim 17 wherein in the first mode a radius
25 controller and/or straightener are provided at least partially in the form of modules which can be removed when the structure is in the horizontal state.
19. A method as claimed in any of claims 16 to 18 wherein the tensioning means in
30 the second mode is located at a position displaced horizontally from a location from which it will be elevated by said tiltable structure in the first mode.